

## Abstract: Spatial structures for climate-friendly living – A Systematic literature review

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The paper is a deliverable for the project TRANSREAL, which stands for Transformative Realism. It is part of Work Package (WP) 1 and serves to inform WP2.

**TRANSREAL**

FOR TRANSFORMATIVE  
CLIMATE ACTIONS

### About TRANSREAL

TRANSREAL explores innovative ways to combine radical with incremental and feasible action to achieve climate-friendly and climate-resilient practices and policies. Such transformative climate action (TCA), contributing to a desired social-ecological transformation, links short-term objectives to improve immediate living conditions with long-term concerns to stay within planetary boundaries. The project will co-design such TCAs in two Austrian rural micro-regions in the field of spatial/settlement structures, like countering splintered development, providing affordable housing, contributing to village regeneration and local job creation, and sustaining provisioning. The overarching research question of TRANSREAL is how transformative realism can improve climate action.

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Work packages:

1. Facilitating multi-level transdisciplinary co-production of knowledge
2. Conducting local participatory research processes in rural case study areas
3. Knowledge integration and dissemination
4. Project management

Focus & Content:

- Strategy „Transformative Realism“
- Combination of
  - ...visionary/transformative targets with pragmatic/incremental measures
  - ...short-term targets of fostering essential and non-essential local provisioning in the foundational economy (food, housing, energy, ...) with long-term targets in climate policy
- Main objectives:
  - change of framework conditions – with a focus on spatial structures, settlement structures and housing
  - support of climate-friendly, socio-ecol. and resilient actions
- Identification of „Transformative Climate Actions“ (TCAs)
- Empirical research in two micro-regions (St. Johann and Pöllau) with participation opportunities for local stakeholders

## Paper

TRANSREAL investigates spatial structures for climate-friendly living with a special focus on settlement structures. Settlements and settlement-related activities (housing, mobility, energy, industry, etc.) are main sources of greenhouse gas emissions and at the same time vulnerable to and increasingly affected by the impacts of climate change. Due to the concentration of people, activities, built structures, key infrastructure and assets, settlements and cities have large potential to increase resource and energy efficiency and decarbonize at scale (IPCC AR6 WGIII, chapter 8). For the same reasons, settlements host high loss and damage potentials and are exposed to severe and increasing climate risks (IPCC AR6 WGII, chapter 6). This makes settlements a priority target sector and key activity field for efforts to both mitigate climate change and adapt to its effects.

Settlement structures are climate-friendly and transformative when they

- a) produce low or zero GHG emissions,
- b) are resilient to climate change and
- c) enable a good life for all within planetary boundaries, which specifically requires transforming Society-Nature relations and re-embedding the economy in biophysical and social limits.

As TRANSREAL is concerned with actions to achieve climate-friendly practices and policies, this paper aims to answer the following research question: **What does the scientific literature say about actions to enable spatial structures for climate-friendly living with a special focus on settlement structures?** Several sub-questions concern 1) key problems and challenges, 2) suggestions and recommendations for actions and actors to address these problems, 3) broader strategies these actions are embedded in, 4) the ambitions of the actions regarding processes of transformation/changing basic social forms in line with social-ecological transformation, 5) the effects of these actions, 6) learnings and insights for WP2.

To answer these questions, we conduct a systematic literature review, using the Scopus database for collecting literature and the software MaxQDA to analyze the literature after screening of the results.

### Bibliography

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